SIEMENS

MAMMOMAT Nova - Opdima

SP

Maintenance Instructions

System

MAMMOMAT 1000/3000/3000 Nova - Opdima

The protocol SPB7-230.105.03.05.02 is required for these instructions

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The document corresponds to the version/revision level effective at the time of system delivery. Revisions to hardcopy documentation are not automatically distributed.

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1 General information

1.1 Training

- Training workshop or at least 1 installation

1.2 Required documents

• Instructions for Use MAMMOMAT 1000/3000 Nova	SPB7-230.201...
• Supplement to the Instructions for Use MAMMOMAT 3000- Opdima® (included in the Opdima® delivery)	SPB7-230.203.13...
• MAMMOMAT 1000/3000/3000 Nova - Opdima® Service Instructions (included in the Opdima® delivery)	SPB7-230.061.11 ...

1.3 Required tools, measurement and auxiliary devices

NOTE

All listed tools, measurement and auxiliary devices, with the exception of those marked with "*", are specified in the STC (Service Tools Catalog).

- Protective ground wire tester (44 15 899 RV090)
- Stereo calibration phantom (included in the Opdima® delivery) (part no. 64 30 701)
- Acrylic plastic (PMMA = Poly-methyl-met-acrylate) plates: 3 plates of AEC calibration Plexiglas 150 mm x 150 mm x 19 mm (part no. 65 61 232) and one plate of calibration Plexiglas, 150 mm x 150 mm x 9.7 mm (part mo. 65 61 224)
- Grid object table
- Mammography bar pattern (5-20 lp/mm), for instance Nuclear Associates Resolution Test Pattern (07-555), http://www.nucl.com
- Cleaning agents* specified in the Instructions for Use MAMMOMAT 1000/3000 Nova, chapter "Cleaning, disinfection"
- Standard service tools*

1.4 Text emphasis

⚠ DANGER	**DANGER indicates that there is an immediate danger of death or serious physical injury.** ➪ **n.a.**
⚠WARNING	**WARNING indicates that there is a risk of possible death or serious physical injury.** ➪ **n.a.**
⚠CAUTION	**CAUTION used with the safety alert symbol indicates that there is a risk of slight or moderate physical injury and/or damage to property.** ➪ **n.a.**
NOTICE	**NOTICE used without the safety alert symbol indicates that non-compliance may cause a situation leading to an undesirable result or state other than death, physical injury or damage to property.** ➪ **n.a.**
NOTE	**NOTE contains information provided with special emphasis to facilitate proper use of the equipment or proper execution of a procedure, i.e. hints, tips.**

1.5 Safety information and preventive measures

NOTE

- **When conducting repair work and tests, please note:**
  - **The product-specific safety information in the document**
  - **The safety information in TD00-000.860.01...**
- **Tests or adjustments that must be made with the radiation ON are identified by the radiation warning symbol.**

  During these types of adjustments, radiation protective clothing must be worn.

2 System status

2.1 Checks

Check the system status and fill out the Maintenance Protocol.

- Check the serial no. and the part no. for the workstation, the CCD camera, and the biopsy controller.
- Check the license key (DICOM option).
- For instructions on how to check the `hostname/hostid`, see the Service Instructions for Opdima®, chapter "Instructions for obtaining the system host ID and host name".
- Document country settings in the Maintenance Protocol
- If applicable, document the network and printer parameters in the Maintenance Protocol.

3 System

3.1 Checks

PMP MO storage media and MO unit

The MO disks must be handled with care. They should never be forced into or out of the drive. They should not be exposed to heat or fluids. Never place heavy objects on an MO disk. The MO drive unit is relatively sensitive to dust.

- Be sure that the unit is installed in a clean environment and is not exposed to dust.
- Check that the correct MO media is used. Only Sony standard media

  (Siemens part no. 66 33 734, Sony RMO-S561, 9.1 GB rewritable)

  can be used as MO media.
- Check that the MO disks are stored in a clean and safe place.
- Check that the local disks and backup disks are properly labeled.
- Check that backup disks are stored separately.
- The MO disks used in the Opdima® system are equipped with a mechanical write protection lock. This lock should NEVER be used since the Opdima® system always attempts to mount the MO disk as a read/write device.

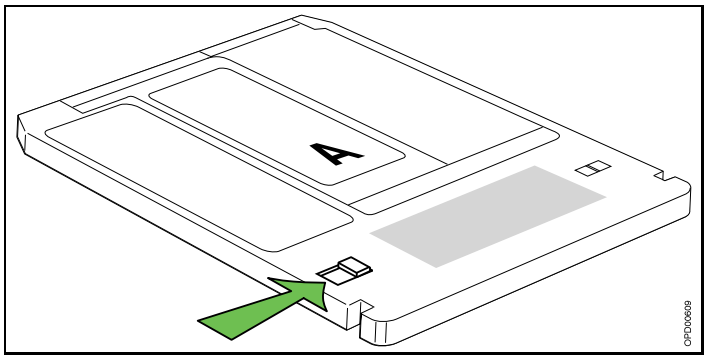

Fig. 1: Write protection lock not activated.

PMP SCSI cables, CD-ROM

It is important to check that the SCSI cables are properly connected and the hardware is terminated correctly. If not, this might result in a number of problems, e.g. failure to write images to MO disk, corrupted MO disk, corrupted hard disk.

- Make sure the SCSI cables are properly connected and attached to the units and that the cable is not bent too much just behind the MO.
- The MO drive is to be terminated with the external termination plug.

If the system is not able to store images on the MO disk due to the above problem, it will take longer to save images when the system can save.

NOTE	**It is important not to interrupt the system when it is saving images on the MO disk because the MO disk can be destroyed.**

PMP General cable information

- Check the connectors and cables between the biopsy controller and CCD camera.
- Check the connectors and cables between the biopsy controller and workstation.
- Check that all cables are undamaged, especially the monitor cables.
- Check that the connectors are properly attached.

SW Disk cache settings

For instructions on how to check the disk cache settings, see the Service Instructions for Opdima®, chapter "Disk cache settings".

SI Biopsy unit

This unit contains the following safety-related parts which should be checked every year and replaced as necessary:

- Biopsy unit connectors (25-pin DSUB connector and 9-pin object table connector). Visual inspection
- Sliding pads on the underside of the biopsy unit object table. Check that the sliding pads are free of apparent and visible damage and that the biopsy unit object table runs smoothly on the base plate.
- Check that the biopsy unit is safely locked to the MAMMOMAT.

4 Testing

4.1 Test

PMF Test of units

For instructions on how to test the units, see the Service Instructions for Opdima®, chapter "Test of units".

4.2 Calibration

PMF CCD camera calibration

For instructions on how to calibrate the CCD camera, see the Service Instructions for Opdima®, chapter "CCD camera calibration and maintenance".

Q Calibration of the biopsy unit

- Check the biopsy unit accuracy according to the Service Instructions for Opdima®, chapter "Verifying the calibration of the biopsy unit". Verify the calibration for all four target points of the stereo calibration phantom.
- If the biopsy unit accuracy is not satisfactory, perform calibration according to the Service Instructions for Opdima®, chapter "Calibration of the biopsy unit".

4.3 Checks

QIQ Opdima® AEC

For instructions on how to check Opdima® AEC, see the Service Instructions for Opdima®,

chapter "Check of Opdima AEC".

QIQ Resolution

For instructions on how to check the resolution, see the Service Instructions for Opdima®,

chapter "Check of resolution".

5 Miscellaneous

5.1 Checks

PMF Cassette locking

- Check that the camera is properly locked to the object table.

PMA UIs and SPEED info

- Check whether all relevant UIs and SPEED info has been completed.
- Check that the customer creates regular backups.

5.2 Final tests

SIE Protective conductor test

- Perform the protective conductor test according to ARTD-002.731.17...

PMP Cleaning/damaged paint

- Clean the unit using the materials recommended in the Instructions for Use for MAMMOMAT 1000/3000 Nova (chapter "Cleaning, disinfection") and repair any damaged paint.
- System ON.

QSQ Final test exposure

Take one final test exposure.

6 Changes since the previous version

Document has been converted to the Data Management System - DMS.

18 Changes since the previous version